

Claims

- [c1] Claim 1. A trip unit including a sensor for sensing a condition of a circuit providing electricity to a load and a signal converter for converting signals generated by said sensor into a digital value indicative of said condition, and further comprising:
- a first storage device including a first trip setting value stored therein;
 - a second storage device including a second trip setting value stored therein;
 - a switch for selecting from said first and second trip setting values; and
 - a microcontroller including an output generating a trip signal in response to said digital value indicative of said condition in the circuit and one of said first and second trip setting values selected by said switch.
- [c2] Claim 2. The trip unit according to Claim 1 wherein said microcontroller is configured for receiving and accessing said first and second trip setting values.
- [c3] Claim 3. The trip unit according to Claim 1 wherein said first storage device is a first register in a non-volatile memory.
- [c4] Claim 4. The trip unit according to Claim 3 wherein said second storage device is a second register in said non-volatile memory.
- [c5] Claim 5. The trip unit of Claim 1 wherein said second storage device includes a dial disposed on said trip unit, said dial changes said second trip setting value.
- [c6] Claim 6. The trip unit of Claim 5 wherein said dial provides one of a analog output and a digital output representing said second trip setting value.
- [c7] Claim 7. The trip unit of Claim 1 wherein said switch includes a mechanical switch disposed on said trip unit indicating which one of said first and second trip setting values is selected.
- [c8] Claim 8. The trip unit of Claim 1 wherein said switch includes an electrical switch capable of local and remote control.
- [c9] Claim 9. The trip unit of Claim 1 wherein said trip unit includes an indicator indicating which one of said first and second trip setting values are selected.

- [c10] Claim 10. The trip unit of Claim 1 wherein said switch and at least one of said first and second storage devices are responsive to remote control and local control.
- [c11] Claim 11. The trip unit of Claim 10 wherein said local control includes one of a keyboard and a keypad, and said one of said keyboard and said keypad is in communication with said microcontroller.
- [c12] Claim 12. The trip unit of Claim 10 wherein said remote control includes a host controller, and said host controller is in communication with said microcontroller via a local area network.
- [c13] Claim 13. The trip unit of Claim 12 wherein said host controller is programmed for monitoring said trip unit.
- [c14] Claim 14. The trip unit of Claim 12 wherein said host controller is connected via an Internet connection to a remote computer such that said remote computer is capable of monitoring said trip unit.
- [c15] Claim 15. The trip unit of Claim 12 wherein said host controller is programmed to download trip setting values to said trip unit.
- [c16] Claim 16. The trip unit of Claim 12 wherein said host controller is connected via an Internet connection to a remote computer such that said remote computer is capable of downloading said trip setting values to said trip unit.
- [c17] Claim 17. The trip unit of Claim 10 wherein said remote control includes a host controller, and said host controller is in communication with said microcontroller via a wireless network using one of RF and IR.
- [c18] Claim 18. A circuit breaker comprising:
a set of contacts for making and breaking an electrical connection between an electrical load and an electrical power supply and a
trip unit operably connected to said contacts, said trip unit including:
a sensor for sensing a condition of a circuit providing electricity to said load;
a signal converter for converting signals generated by said sensor into a digital value indicative of said condition;

a first storage device configured to store a first trip setting value;
a second storage device configured to store a second trip setting value;
a switch configured to select from said first and second trip setting values; and
a microcontroller including an output generating a trip signal in response to
said digital value indicative of said condition in the circuit and one of said first
and second trip setting values selected by said switch.

[c19] Claim 19. The circuit breaker according to Claim 18 wherein said
microcontroller is configured for receiving and accessing said first and second
trip setting values.

[c20] Claim 20. The circuit breaker according to Claim 18 wherein said first storage
device is a first register in a non-volatile memory.

[c21] Claim 21. The circuit breaker according to Claim 20 wherein said second
storage device is a second register in said non-volatile memory.

[c22] Claim 22. The circuit breaker of Claim 18 wherein said second storage device
includes a dial disposed on said trip unit, said dial changes said second trip
setting value.

[c23] Claim 23. The circuit breaker of Claim 22 wherein said dial provides one of a
analog output and a digital output representing said second trip setting value.

[c24] Claim 24. The circuit breaker of Claim 18 wherein said switch includes a
mechanical switch disposed on said trip unit indicating which one of said first
and second trip setting values is selected.

[c25] Claim 25. The circuit breaker of Claim 18 wherein said switch includes an
electrical switch capable of local and remote control.

[c26] Claim 26. The circuit breaker of Claim 18 wherein said trip unit includes an
indicator indicating which one of said first and second trip setting values are
selected.

[c27] Claim 27. The circuit breaker of Claim 18 wherein said switch and at least one
of said first and second storage devices are responsive to remote control and

local control.

- [c28] Claim 28. The circuit breaker of Claim 27 wherein said local control includes one of a keyboard and a keypad, and said one of said keyboard and said keypad is in communication with said microcontroller.
- [c29] Claim 29. The circuit breaker of Claim 27 wherein said remote control includes a host controller, and said host controller is in communication with said microcontroller via a local area network.
- [c30] Claim 30. The circuit breaker of Claim 27 wherein said remote control includes a host controller, and said host controller is in communication with said microcontroller via a wireless area network using one of RF and IR.
- [c31] Claim 31. The circuit breaker of Claim 30 wherein said host controller is programmed for monitoring said trip unit.
- [c32] Claim 32. The circuit breaker of Claim 30 wherein said host controller is connected via an Internet connection to a remote computer such that said remote computer is capable of monitoring said trip unit.
- [c33] Claim 33. The circuit breaker of Claim 30 wherein said host controller is programmed to download trip setting values to said trip unit.
- [c34] Claim 34. The circuit breaker of Claim 30 wherein said host controller is connected via an Internet connection to a remote computer such that said remote computer is capable of downloading said trip setting values to said trip unit.
- [c35] Claim 35. A method of setting multiple trip setting values in a trip unit that includes a sensor for sensing a condition of a circuit providing electricity to a load and a signal converter for converting signals generated by said sensor into a digital value indicative of said condition, the method comprising:
storing a first trip setting value in a first storage device;
storing a second trip setting value in a second storage device;
selecting from said first and second trip setting values with a switch; and
generating a trip signal from a microcontroller in response to said digital value

indicative of said condition in the circuit and one of said first and second trip setting values selected by said switch; said microcontroller is configured for receiving and accessing said first and second trip setting values.

[c36] Claim 36. The method set forth in Claim 35 further comprising:
transmitting said new trip setting value over a local area network to said trip unit; and
downloading said new trip setting value in one of said first and second storage devices.

[c37] Claim 37. The method set forth in Claim 35 further comprising:
transmitting said new trip setting value over an Internet connection from a remote location to said trip unit; and
downloading said new trip setting value in said one of said first and second storage devices.

[c38] Claim 38. A method of setting multiple trip setting values in a circuit breaker having a set of contacts for making and breaking an electrical connection between an electrical load and an electrical power supply and a trip unit operably connected to said contacts, the trip unit includes a sensor for sensing a condition of a circuit providing electricity to a load and a signal converter for converting signals generated by said sensor into a digital value indicative of condition, the method comprising:
storing a first trip setting value in a first storage device;
storing a second trip setting value in a second storage device;
selecting from said first and second trip setting values with a switch;
reading said switch by a microcontroller to determine which one of said first and second storage device is selected to read from;
generating a trip signal from said microcontroller in response to said digital value indicative of said condition in the circuit and one of said first and second trip setting values selected by said switch; said microcontroller is configured for receiving and accessing said first and second trip setting values.

[c39] Claim 39. The method according to Claim 38 further comprising:
transmitting a new trip setting value over a local area network to said trip unit;

and

downloading said new first trip setting value in one of said first and second storage devices.

[c40]

Claim 40. The method according to Claim 38 further comprising:

transmitting a new trip setting value over a wireless network using one of RF and IR to said trip unit; and

downloading said new first trip setting value in one of said first and second storage devices.

[c41]

Claim 41. The method set forth in Claim 38 further comprising:

transmitting a new trip setting value over an Internet connection from a remote location to said trip unit; and

downloading said new trip setting value in one of said first and second storage devices.

[c42]

Claim 42. A trip unit including a sensor for sensing a condition of a circuit providing electricity to a load and a signal converter for converting signals generated by said sensor into a digital value indicative of said condition, and further comprising:

a first storage means for storing a first trip setting value therein;

a second storage means for storing a second trip setting stored therein;

a switching means for selecting from said first and second trip setting values;

a microcontroller means for generating an output trip signal in response to said digital value indicative of said condition in the circuit and one of said first and second trip setting values selected by said switching means.